

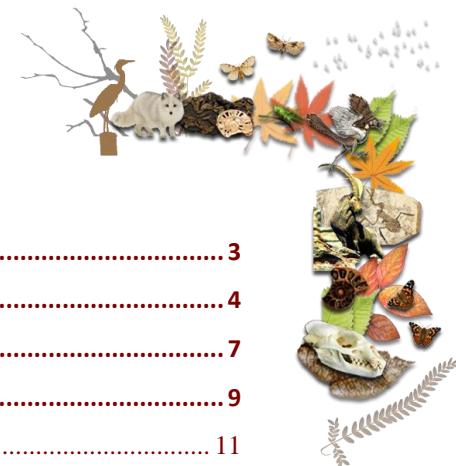


**Natural History & Environmental Cultural Heritage in  
European Digital Libraries for Education**

## **Natural Europe Pathway Authoring Tool Manual**



*Project co-funded by the European Commission within the ICT Policy Support Programme*



## Table of contents

TABLE OF CONTENTS .....	3
TABLE OF FIGURES .....	4
1 INTRODUCTION .....	7
2 NATURAL EUROPE EDUCATIONAL PATHWAY AUTHORIZING TOOL .....	9
2.1 SIGN IN.....	11
2.2 DASHBOARD.....	12
2.3 RESOURCES .....	14
2.3.1 Add a Resource .....	15
2.3.2 Edit a Resource.....	21
2.4 PATHWAYS.....	23
3 DESIGN YOUR EDUCATIONAL PATHWAY .....	25
3.1 HOW TO CREATE A PATHWAY .....	25
3.1.1 Pathway Sections .....	25
3.1.2 How to fill in a page .....	28
3.1.3 Pathway Metadata .....	33
3.1.4 Licensing your Pathway .....	35
4 EDUCATIONAL PATHWAY - STEP BY STEP TUTORIAL.....	37
5 REFERENCES .....	47



## Table of figures

<b>Figure 2.1:</b> Main Page of NE Authoring tool .....	10
<b>Figure 2.2:</b> Log in.....	11
<b>Figure 2.3:</b> Dashboard.....	12
<b>Figure 2.4:</b> Personal Account .....	13
<b>Figure 2.5:</b> Resources Management .....	14
<b>Figure 2.6:</b> Thumbnail/image preview.....	14
<b>Figure 2.7:</b> Add a file .....	15
<b>Figure 2.8:</b> Add hyperlink.....	16
<b>Figure 2.9:</b> Ingest a Resource.....	18
<b>Figure 2.10:</b> Search box to ingest a resource .....	19
<b>Figure 2.11:</b> Results to ingest a Resource.....	20
<b>Figure 2.12:</b> Add it to my Repository .....	20
<b>Figure 2.13:</b> Edit the metadata of a Resource .....	22
<b>Figure 2.14:</b> Pathways.....	23
<b>Figure 3.1:</b> Introduction section .....	26
<b>Figure 3.2:</b> Pre-visit section .....	27
<b>Figure 3.3:</b> Visit phase.....	27
<b>Figure 3.4:</b> Post-visit phase .....	28
<b>Figure 3.5:</b> Page structure.....	29
<b>Figure 3.6:</b> Select supporting material.....	31
<b>Figure 3.7:</b> Attach a resource.....	32
<b>Figure 3.8:</b> Edit page - Breadcrumb .....	33
<b>Figure 3.9:</b> Pathway page .....	33
<b>Figure 3.10:</b> Add pathway - metadata .....	34
<b>Figure 3.11:</b> License your work.....	35



<b>Figure 4.1:</b> Pathway starting point .....	37
<b>Figure 4.2:</b> Pathway sections in Edit mode.....	38
<b>Figure 4.3:</b> Pathway sections in Visit mode .....	39
<b>Figure 4.4:</b> Pre-visit Phase in Edit mode .....	40
<b>Figure 4.5:</b> Pre-visit in Visit mode.....	41
<b>Figure 4.6:</b> Visit pages in Edit mode.....	42
<b>Figure 4.7:</b> Visit pages in Visit mode .....	43
<b>Figure 4.8:</b> Insert Supporting Material in Edit mode .....	44
<b>Figure 4.9:</b> Supporting materials in Visit mode .....	44





## 1 Introduction

*'Place museum visitors in the centre of an exhibition that is both physical & virtual using technology, services and learning content to provide personalized, appealing educational experiences; changing the way museum education is perceived and conducted, worldwide.'*

Natural Europe project vision

### Bringing the museum to your classroom...

Educational activities outside the classroom have a great potential of engaging students in practical activities that allow experimentation and help consolidating the theoretical background presented in the classroom. When these activities take place in settings such as museums, places of discovery and wonder, learners can build their knowledge while playing and exchanging social and scientific information.

In order to make the most of it, a museum visit (either physical or virtual) needs to be carefully planned and prepared by the teacher or the museum educator. To support teachers in their effort, we came up with the **Natural Europe Educational Pathway**, a framework that integrates the pedagogical requirements of a learning activity taking place outside the classroom. Although typically the pathway revolves around a visit to the museum, the learning experience needs to be embedded in a context that allows the preparation of the learner before the visit and exploits through follow-up up activities the visit's learning outcomes. To address these requirements, the Natural Europe Educational Pathway consisting of three (3) main phases: the *Pre-Visit phase*, the *Visit*



*phase* and the *Post-Visit phase*. Each of the three phases includes one or more Teaching steps guiding the implementation of the teaching activities (i.e. Question Eliciting Activities, Active Investigation, Creation, Discussion and Reflection).

The aim of this Manual is to introduce the **Natural Europe Pathway Authoring Tool** and guide teachers and museum educators through the design of such online Educational Pathways by providing a step by step design tutorial.

The Natural Europe Authoring Tool is a database of educational pathways, where educators can **create** their own pathway and **share** them with the community, while **making use of a large collection** digital resources from **Natural History Museums** and collections such as **Europeana**<sup>1</sup>, a European-wide cultural heritage digital library. Learners can use the Tool to **follow educational pathways** and **play with digital resources**.

For more information on the concept of Educational Pathway and the learning theories behind it, the **Natural Europe Educational Pathway Handbook** complementing this Manual is available online at <http://wiki.agroknow.gr/agroknow/index.php/Resources>. The Handbook also discusses the potential of museums to foster learning and guides teachers and educators through the design of learning activities that allow them to make the leap between classroom and museum.

The present document was created in the context of the **Natural Europe<sup>2</sup> project (NE)**, a European funded project which aims to: a) facilitate the search and retrieval of digital library objects related to Natural History, Environmental Education, and Biological Sciences; b) provide educators with the necessary software tools to design innovative online pathways using digital collections of Natural History Museums; c) encourage visitors to follow educational pathways and exploit high quality digital content available in Natural History Museums.

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<sup>1</sup> <http://www.europeana.eu/portal/>

<sup>2</sup> <http://www.natural-europe.eu/>



## 2 Natural Europe Educational Pathway Authoring Tool

In order to help educators design innovative Educational Pathways, an online software tool that guides them through each step of the pathway design is developed in the context of Natural Europe project. The Natural Europe Authoring Tool is a database of educational pathways and digital resources.

The resources hosted by the software tool can easily be **searched, retrieved and integrated** into your pathway, but there is also the option to **upload and store** your own resources. More than being just an authoring tool for teachers and educators, the software allows visitors to **follow educational pathways** and **play with digital resources** belonging to various museums. Students and learners can directly receive guidelines and complete educational pathways prepared by educators.

The following section includes a brief overview of the Natural Europe Pathway Authoring Tool. In order to access the tool, **open a browser window** and **type the following address:**

**<http://education.natural-europe.eu>**

Figure 2.1 represents the **Main page** of the Natural Europe Pathway Authoring Tool. On this page the visitor can **browse** through the listed pathways of the Pathway Repository and **access** them by selecting the **GO NOW!** button.



Natural Europe

Sign-in

Pathways

Learning Material Search

Pathways Repository

Olive tree mythology teacher pathway

GO NOW!

RENEWABLE, GREEN, CLEAN?  
Wind Energy & Solar Energy (PV)

GO NOW!

Dinosaur Tracks fieldwork as an Exomuseum

GO NOW!

Restless Earth

Figure 2.1: Main Page of NE Authoring tool



## 2.1 Sign in

Natural Europe Pathway Authoring Tool

Log In [Go to Home Page](#) | [Lost your password?](#)

Username \*

Password \*

Remember  Me?

**Log In**

Figure 2.2: Log in

To have access to more functionalities including creating your own pathway and uploading resources, **Sign in is required**.

Select the **Sign-in** button located on the top right corner of your screen and complete the required fields by providing your **Username** and **Password**.



## 2.2 Dashboard

Once you have logged in, the **Dashboard** of the Pathway Authoring Tool provides you with an overview of what is available on the site.

The screenshot shows the Natural Europe Pathway Authoring Tool dashboard. At the top, there's a dark header bar with the text "Welcome, Effie" and "Log Out". Below the header, there are two tabs: "Resources" and "Pathways", with "Resources" being the active tab. The main content area is titled "Dashboard" and contains a "Pathway Authoring Tool" section. This section includes a "Resources" sub-section with links to "Browse your Resources" and "Create a Pathway", and a "Pathways" sub-section with links to "Browse Pathways" and "Create a Pathway". To the right of this section is a large central area labeled "Create and manage Pathways". On the far right of the dashboard, there are two boxes: "Site Overview" (containing information about the number of resources and users) and "Guidelines" (containing links to various documentation). Red boxes and labels (a, b, c, d, e) are overlaid on the interface to identify specific elements:

- a**: Points to the "Resources" tab in the toolbar.
- b**: Points to the "Resources" sub-section in the "Pathway Authoring Tool" area.
- c**: Points to the "Site Overview" box.
- d**: Points to the "Guidelines" box.
- e**: Points to the "Log Out" link in the header.

Figure 2.3: Dashboard

The main toolbar consists of two sections: **Resources** and **Pathways** (Figure 2.3 – area “a”).

You can either access Resources and Pathway sections from the toolbar or from the links provided right below the toolbar: **Browse your resources**, or **Browse/ Create a pathway** (Figure 2.3 – area “b”).

On the right column of the Dashboard you can check the **Site Overview** (number of items and users of the site) (Figure 2.3 – area “c”), **Get online help** (Manual, Handbook, Quality Criteria) (Figure 2.3 – area “d”)



If you want to edit your personal information you have to click on the top right corner (near log-out) your name (Figure 2.3 – area “e”) and then system provides a form where you can change your information (name, email, username, password) (Figure 2.4).

<b>Username</b>	Stauros
<b>First Name</b>	Papadopoulos
<b>Last Name</b>	
<b>Email</b>	museumstaff@yahoo.gr
<b>Institution</b>	
Change Password	
<b>Current Password</b> *	
<b>New Password</b> *	
<b>Repeat New Password</b> *	

**Figure 2.4:** Personal Account



## 2.3 Resources

Natural Europe Pathway Authoring Tool

Resources Pathways

Browse Resources (24 total)

Ingest a Resource Add a Hyperlink Add a File

Quick Filter: All · Public · Private  
Toggle: Show Details

Search Advanced Search

1 2 3 Next Last

Title	Type	Public	Date Added
Vanessa atalanta	Hyperlink		01.20.2012
bad_wolf	Photos	✓	01.09.2012
wolf_sheep_shadow	Photos	✓	01.04.2012

Details · Edit · Delete

a

b

c

d

Figure 2.5: Resources Management

The **Resources** area consists of **Resources Management** options such as **Basic** and **Advanced Search** (Figure 2.5 - area “b”) with additional parameters such as *Type, Range, Keyword*. Also you can **filter** your results (Figure 2.5 – area “d”) with additional parameters such as *Public/Private Resources* etc.

Users can view the resource’s **thumbnail/image preview** (Figure 2.5 – area “a”)



Figure 2.6: Thumbnail/image preview



### 2.3.1 Add a Resource

You can **Add a Resource** (Figure 2.5 – area “c”) into your repository by three ways.

1. You can **add a file** from your personal resources (ex. from your local disc)

**Add a file**

\*Title

\*Description

\*Type  Photo

Add File

Find a File  Αναζήτηση...

**Figure 2.7:** Add a file



**2. Add a hyperlink:** you can enter a URL that links to another website/source

Add a Hyperlink

---

\*Title

---

\*Description

---

\*URL

---

**Add Resource**

**Figure 2.8:** Add hyperlink

**3. Ingest a resource** by searching within 3 repositories (Figure 2.9 – area “a”):

- a. ARIADNE (<http://www.riadne-eu.org/>),
- b. Europeana
- c. Natural Europe Cultural Collections



In the "**Ingest a Resource**" option you can search for an item though the available repositories. After you decide on the ones that interests you, then click the "**Add it to my repository**" button (Figure 2.5 – area "b"). After adding the resource in your *Resources* then you can add some extra metadata.

Moreover, you have the option to **filter** the results according to the following parameters: *image, text, sound or video* (Figure 2.5 – area "c")

Please mind that all the resources uploaded **are not** "Public" by default. If you would like to use a resource in your pathway, and therefore be visible to others, then you have to make this resource **public**.

Please mind that if a resource has been already uploaded on the Multimedia Authoring Tool, then it can be found in the Natural Europe Cultural Collections and be add to your „Resources” collection following the „Ingest a Resource” procedure. You can search the resource by entering its title or keywords in the „search” option (Figure 2.9).



Ingest a Resource from Natural Europe federation

**Filter results by type:**

- IMAGE
- TEXT
- VIDEO
- SOUND

JPG    TEXT   

You search: campanula  
Total results : 26

1 2

**Natural Europe (26)**

[Europeana \(1502\)](#)

[Ariadne \(7\)](#)

**Campanula hierapetrae**

[Access to the resource](#)

[View Metadata](#)

**Add it to my Repository**

**Campanula saxatilis**

[Access to the resource](#)

[View Metadata](#)

**Add it to my Repository**

Figure 2.9: Ingest a Resource



**The procedure is:**

- a. Click on the tab “**Ingest a Resource**” (Figure 2.5 – area “c”). Then the system provides a “**search box**” where you can search within the 3 repositories of Natural Europe Federation (ARIADNE, Europeana and Natural Europe Cultural Collections) (Figure 2.9 – area “a”) by entering a keyword.



**Figure 2.10:** Search box to ingest a resource



b. System searches through the 3 repositories and then returns the **results**

**Filter results by type:**  
IMAGE TEXT VIDEO SOUND  
JPG TEXT

You search: fossil  
Total results : 135

1 2 3 4 5 6 7 8 9 10 ... 12

[Natural Europe \(135\)](#)  
[Europeana \(14980\)](#)  
[Ariadne \(183\)](#)

**Acer integrerrimum**  
Leaf of a fossil maple.  
[Access to the resource](#)  
[View Metadata](#)  
**Add it to my Repository**

**Carpinus betulus**  
Fruit of a fossil hornbeam.  
[Access to the resource](#)  
[View Metadata](#)

Figure 2.11: Results to ingest a Resource

c. Click on the tab “**Add it to my Repository**” in order to insert an item into your collection, where you can enrich it with educational metadata.

**Add it to my Repository**

Figure 2.12: Add it to my Repository



### 2.3.2 Edit a Resource

You can edit a resource

1. By clicking the **edit** button on **Browse Resource** page (Figure 2.5 – area “a”), or short after you *add the resource* into your repository, with any of the three aforementioned ways, the system will redirect you to the form where you can edit the metadata of the resource.
2. In the **Edit a Resource** page you can select from the left sub-menu (Figure 2.13 – area “a”) the **type of metadata** you would like to configure
3. Then you can **change the element** of your choice (Title, Description)
4. You can make the Resource “**public**” or you can “**Delete**” it if you want (Figure 2.13 – area “b”)
5. Finally, if you want to save the changes that you made to the resource you just have to click the button “**Save Changes**” (Figure 2.13 – area “c”)



Edit Resource #2352: "Fish"

**a** General  
Educational  
Rights  
Classification  
Url

**b** Delete this Item  
Public:

**c** Save Changes

<b>Title</b>	Fish	English <input type="button" value="▼"/> <a href="#">Remove</a>
<b>Language</b>	English <input type="button" value="▼"/>	
<b>Description</b>	This fossil is part of the body of the Jurassic fish Lepidotus. Incomplete fossils like this one are much more common than complete fossils. When an <a href="#">Add</a>	English <input type="button" value="▼"/> <a href="#">Remove</a>

Figure 2.13: Edit the metadata of a Resource



## 2.4 Pathways

The **Pathways** area, accessible from either the Dashboard links or the toolbar, provides a list of the Pathways available on the site. To read more about each Pathway, click on the Title link. Logged in users can also **Add their own Pathway** (Figure 2.14 Error! Reference source not found.- area “a”). For step by step guidelines on how to create your own Pathway, go to chapter 3.11 *How to create a Pathway*.

Natural Europe Pathway Authoring Tool

Resources Pathways

Browse Pathways (2 total)

a Add Pathway

Title	Public	Edit?	Delete?
<a href="#">Sea Turtle</a>		Edit	Delete
<a href="#">Whale at Entrance</a>		Edit	Delete

Figure 2.14: Pathways





### 3 Design your Educational Pathway

Before starting to develop your own Educational Pathway using the Natural Europe Authoring Tool (<http://education.natural-europe.eu>) it is important to remember that an Educational Pathway consists of text, images and a number of educational resources. Moreover a Pathway is structured in several sections guiding you through the visit and teaching phases. The Authoring Tool gives you the opportunity to create your Pathway online and to upload your own resources, but also to use the ones available on the site. Resources can include images, videos, links, documents and presentations.

Therefore, before starting the creation of your Pathway, you might want to make sure that all the images and resources you plan to include in your Pathway are uploaded and available on the tool. This chapter will focus on how to Create a pathway.

#### 3.1 How to create a Pathway

In order to create a Pathway on the Natural Europe Authoring Tool, follow the steps listed below:

- Sign in at <http://education.natural-europe.eu> for more info check section 2.1 *Sing In*
- Go to the **Pathways** tab and click on **Add Pathway** button (Figure 2.14-area “a”) alternatively select **Create a pathway** from the Dashboard (Figure 2.3-area “b”);

##### 3.1.1 Pathway Sections



❖ Complete one by one the **Pathway Sections: Introduction, Pre-visit Phase, Visit Phase and Post-visit Phase**

❖ Each section consists of one or more pages corresponding to the teaching steps of an Educational Pathway. For each page, select **Edit** to start filling it in or **Save and return to Pathway** after you have completed all the pages.

- **Introduction section** consists of two (2) pages: *Guidance for Preparation, Connection with Curriculum*.

## Introduction

**Pages:**

Guidance for preparation	 Edit
Connection with Curriculum	 Edit

**Figure 3.1:** Introduction section



## Pre-visit Phase

### Pages:

- Provolve curiosity  [Edit](#)
- Define questions from current knowledge  [Edit](#)
- Propose preliminary explanations or  [Edit](#)
- Plan and conduct simple investigation  [Edit](#)

Figure 3.2: Pre-visit section

- Visit phase consists of three (3) pages: *Gather evidence from observation*, *Explanation based on evidence* and *Consider other explanations*.

## Visit Phase

### Pages:

- Gather evidence from observation  [Edit](#)
- Explanation based on evidence  [Edit](#)
- Consider other explanations  [Edit](#)

Figure 3.3: Visit phase



- **Post-visit phase** consists of three (3) pages as well: *Communicate explanation, Follow-up activities and materials* and *Sustainable contact*.

**Post-visit Phase**

**Pages:**

Communicate explanation	 Edit
Follow-up activities and materials	 Edit
Sustainable contact	 Edit

**Figure 3.4:** Post-visit phase

### 3.1.2 How to fill in a page

All the pages from the different sections of the pathway have an identical structure that allows you to insert text, images and connect supporting material and Europeana objects with just few clicks. Additionally, if you cannot find the resource that you are looking for, you can **Add a new resource**.



Preview Pathway

Quality Criteria for Natural Europe Pathways

Click to add Supporting Materials

Resources that will be added here serve as complementary to the items attached on the pathway



[Power station, Isle of Grain, Kent](#)

## Page Content

1

Click to attach a resource from your collection.

[Attach a Resource](#)

2

**B** *I* **U** Paragraph HTML

The teacher, prior to any discussion, shows to the students

- a [video](#) for the production of energy in a traditional energy plant and the climate change,
- a [photo](#) of a traditional energy plant.

In the end of the projection, the teacher asks the students to comment and describe the content of the video.

Figure 3.5: Page structure



- ✿ Start by filling in the page with **text**. Use the **Rich text editor** to format your text (up to 4 text-boxes).
- ✿ In each phase of the pathways the user can add an image as:
  - An attached item (see button "**Attach a Resource**" that is placed on the top of the text box in the main area of each page) (Figure 3.5 – area "b")
  - **Supporting material** - either image, or page, or any link from the library (resources) that the user has in the Pathway Tool (using the button **add supporting material** on the upper right part of each page) (Figure 3.5 – area "a")
  - **Link** within the text of each phase of the pathway (through the insert link button in the text editor)

The differences between the above are:

1. With the "attach" option you insert images that appear inside the pathway text (used as the main material of the pathway, the most important - up to 4 items)
2. With the "supporting material" you insert images and links, etc that appear in small thumbnails (preview) alongside the text of the pathway (used for material that complements the pathway).
3. Links provided in the text can only be links to external websites and not within the Natural Europe Pathway Authoring Tool

- ✿ **Add supporting materials** (Figure 3.5 – area "a"); Select an item or choose it from the list provided and click **Insert**. Please note that only public items will be listed in supporting materials. The item will be displayed in the **Supporting materials** section of the pathway page. If you want to remove a supporting material from the list click on the  icon.



Select an object to add

All Items: Choose an Item or (Nothing)

**Insert** **Cancel**

**Figure 3.6:** Select supporting material



- **Attach a Resource** (Figure 3.5 – area “b”) Select a resource from the list and then click “Attach Selected Item” (Figure 3.7 – area “b”).
- You can also search through the items (advance and basic search options)(Figure 3.7–area “a”).

Attach an Item

Show Search Form a

1 2 3 4 Next Last

13291 Bankovka

10863 Prospekt - ochrana prírody

Attach Selected Item b

**Figure 3.7:** Attach a resource



>Select the **Preview Pathway** link to check how your Pathway will look like once published.

>Select from the breadcrumb the section that you want, in order to edit only this section.

[Pathways](#) > [RENEWABLE, GREEN, CLEAN? Wind Energy & Solar Energy \(PV\)](#) > [Pre-visit Phase](#) > [Edit Page](#)

**Figure 3.8:** Edit page - Breadcrumb

>Select **Save** or **Save and return to pathway** to complete the other pages on the sections of the pathway.

**Save and Return to Pathway** or **Save** or **Cancel**

**Figure 3.9:** Pathway page

### 3.1.3 Pathway Metadata

In order to describe your pathway, you have four (4) categories of metadata available: **General**, **Educational**, **Rights** and **Classification**.

Start by providing a **slug** for your pathway. The slug corresponds to the URL of the specific Pathway and should be unique.



## Pathway Metadata

<b>General</b>	<b>Title</b>	RENEWABLE, GREEN, CLEAN? Wind Energy & Solar Energy (PV)	English <input type="button" value="▼"/> <a href="#">Remove</a>
<a href="#">Educational</a>	<a href="#">Add</a>		
<a href="#">Rights</a>	<b>Language</b>	English <input type="button" value="▼"/>	
<a href="#">Classification</a>	<b>Description</b>	examination of two renewable energy sources	English <input type="button" value="▼"/> <a href="#">Remove</a>
	<a href="#">Add</a>		

Figure 3.10: Add pathway - metadata

In the **General** section, you can provide the **Title** and **Language** of the pathway and add a **Description**.

The **Educational** section focuses on the **Resource type**, **Intended end user**, **Learning context** and **Typical Age range**.

Provide information about **Copyright** and other restrictions in the **Rights** section.

Finally fill in the **Classification** sections and **Save changes** or **Save and Finish** if you have finalized your pathway.



## Pathway Metadata

General	Copyright and other Restrictions	<input checked="" type="radio"/> Yes <input type="radio"/> No
Educational	Are commercial uses of this resource allowed?	<input checked="" type="radio"/> Yes <input type="radio"/> No
Rights	Are modifications of your work of this resource by other people allowed?	<input checked="" type="radio"/> Yes <input type="radio"/> No <input checked="" type="radio"/> Yes, if others share alike
Classification	Cost	<input checked="" type="radio"/> Yes <input type="radio"/> No

Figure 3.11: License your work

### 3.1.4 Licensing your Pathway

Your Educational Pathway should include a License in order to inform other users about the conditions under which you prefer to share your work.

To select a license, fill in the Rights section of Pathway Metadata.

Select your preferences from the fields provided in order to decide whether you prefer to allow commercial uses of your work, modifications and if the pathway is available freely or at a cost.

Once you provide this information, the tool will select the appropriate license (e.g. a Creative Commons license), and make it available on the main page of the pathway.





## 4 Educational pathway - Step by Step Tutorial



Arctic Livelihoods

GO NOW!

Figure 4.1: Pathway starting point



**EDIT  
MODE**

#### Pathway Sections and Pages

**Introduction**

Pages:

- Guidance for preparation [Edit](#)
- Connection with Curriculum [Edit](#)

**Pre-visit Phase**

Pages:

- Provoke curiosity [Edit](#)
- Define questions from current knowledge [Edit](#)
- Propose preliminary explanations or [Edit](#)
- Plan and conduct simple investigation [Edit](#)

**Visit Phase**

Pages:

- Gather evidence from observation [Edit](#)
- Explanation based on evidence [Edit](#)
- Consider other explanations [Edit](#)

**Post-visit Phase**

Pages:

- Communicate explanation [Edit](#)
- Follow-up activities and materials [Edit](#)
- Sustainable contact [Edit](#)

**Figure 4.2:** Pathway sections in Edit mode



## VISIT MODE

**Arctic Livelihoods**  
Picture of reindeer herder marking a reindeer calf.

◀

**Title: Arctic Livelihoods**  
Description: The educational pathway presents different livelihoods in the Arctic. The focus of the pathway is to understand the challenges related to the sustainable use of the Arctic and its natural resources.  
Language: English  
Pathway last saved at : 2013-09-18 06:36:57  
Name : Ari Laakso  
Email : ari.laakso@ulapland.fi  
Typical Age Range: 13-16  
Intended End User Role: teacher

Email  Print

Introduction Pre-visit Phase Visit Phase Post-visit Phase

**Guidance for preparation**  
The Arctic Livelihoods pathway contains three different phases:  
Pre-visit phase: This phase takes place in the school class. The teacher gives an introduction to the pathway and to the different Arctic livelihoods that has been chosen for the pathway. The idea is to ask the students about what they know about the different Arctic livelihoods. The students writes down their thoughts on post-it stickers and each of the students should have the possibility to present their thoughts of at least one livelihood. The teacher gathers these post-it tags to be used later in the pathway.  
Visit phase: The teacher books a visit to Arctic Centre. Please see contact information. During the visit the class is divided into 4 or 5 groups and each group is assigned to a different livelihoods. The students will follow the teacher. The theme of the visit is on climate change and its effect and influence on the different livelihoods. The students should deliberate on how climate change has effected the livelihood or will effect the livelihood. A science explainer will give a tour which focuses on the topic. After the tour is given, the students have some time to deliberate on the issue. The visit ends with a concluding session where each group shortly present their initial thoughts to the other groups and the audience.  
Equipment: The pathway do not require any specific equipment. Please reserve several blocks of different colour of post-it stickers to be utilized by the students under the different sessions and also poster material. The posters can also be produced using computers programs such as powerpoint and then be printed.

**Arctic Livelihoods**

**Supporting Materials**

05920 Obálka průvodu  
dla vydání, FDC  
právnické pořízení - fauna

**Connection with curriculum**  
The Arctic Livelihoods pathway is connected to the geography and biology curriculum. The pathway is made for students from 7th to 9th grade in the Finnish primary school. The topics that the pathway includes are:  
- Northern livelihoods  
- People of the north  
- Indigenous peoples  
- Northern culture  
- Natural resources of the Arctic  
- Climate change and global warming

Figure 4.3: Pathway sections in Visit mode



**EDIT  
MODE**

## Edit Page Content: "Provoke curiosity"

[Pathways](#) > [Arctic Livelihoods](#) > [Pre-visit Phase](#) > Edit Page Content: "Provoke curiosity"

[Preview Pathway](#)

[Quality Criteria for Natural Europe Pathways](#)

[Insert Supporting Material](#)

Add one of your resources as supporting material for this page. Resources that will be added here serve as complementary to the items attached on the pathway.

- Eland
- Eland [gawai]
- Eland
- 06769 Známka poštová - fauna

### Page Content

[Insert Image](#)

Insert image: the image files added here will appear within the corpus of your pathway.

[Paragraph](#) [HTML](#)

- Do any of you eat reindeer? Do any of you eat fish?
- Do any of you own anything containing metal?
- How many of you biked to school today? How many of you came by car?
- What do you think of the weather lately. Good, bad, rainy, cold, warm?
- Why do you think that I ask these questions?

**Figure 4.4:** Pre-visit Phase in Edit mode



VISIT  
MODE

Introduction      Pre-visit Phase      Visit Phase      Post-visit Phase

**I Provoke curiosity**

- Do any of you eat reindeer? Do any of you eat fish?
- Do any of you own anything containing metal?
- How many of you biked to school today? How many of you came by car?
- What do you think of the weather lately. Good, bad, rainy, cold, warm?
- Why do you think that I ask these questions?

**Supporting Materials**

- Eland
- Eland [gewei]
- Eland
- 06769 Známka poštová - fauna

**I Define questions from current knowledge**

**Supporting Materials**

Figure 4.5: Pre-visit in Visit mode



**EDIT  
MODE**

## Visit Phase

### Pages:

Gather evidence from observation

 Edit

Explanation based on evidence

 Edit

Consider other explanations

 Edit

**Figure 4.6:** Visit pages in Edit mode



VISIT  
MODE

Introduction      Pre-visit Phase      Visit Phase      Post-visit Phase

**Gather evidence from observation**

The visit to Arctic Centre's Arktikum Science Centre starts with a short brief to what observations the students must do during the guided tour in the exhibition. The main focus of the tour is to present the Arctic and the changes that are taking place inside the Arctic. The science explainer will especially focus on global warming and climate change in the Arctic.

The students should, during the tour, try to observe the impacts that climate change has on the Arctic livelihood that has been designated them by the teacher. Each student and group should write down the impacts they recognize, either positive or negative. The duration of the tour is 30 - 40 minutes depending on questions asked during the tour.

  
Happy fisherman      Reindeer herder

**Supporting Materials**

 Arktikum Science Centre, Arctic Centre

 Arctic Centre

 Arctic map

 Graphic Illustrations of Animals

**Explanation based on evidence**

After the tour, the student groups are given 10 minutes to gather their views and thoughts regarding their topic. They should use post-it stickers to write down the impacts that climate change have on the livelihood. These are them presented in a concluding session in the exhibition class room. The science explainer and teacher functions as the mediator for the session. Both positive and negative effects are encouraged.

**Consider other explanations**

The science explainer then makes a concluding presentation of the findings presented by the students. At the same time the science explainer also tries to provoke the students to think critically. Can we say that climate change has both positive and negative impacts? Is it good that the forest grows faster and that the polar bears disappears with the diminishing sea ice. Is it positive or negative that we extract oil and gas in the Arctic, fuel that we use in our cars every day. Why don't we act so that we use as little energy and resources as possible? Why can't people change their behaviour?

General      Lifecycle  
Meta-Metadata      Format  
Educational      Rights  
Classification

Figure 4.7: Visit pages in Visit mode



**EDIT  
MODE**

**Insert Supporting Material**

Add one of your resources as supporting material for this page. Resources that will be added here serve as complementary to the items attached on the pathway

🕒 [Arktikum Science Centre, Arctic Centre](#)  
🕒 [Arctic Centre](#)  
🕒 [Arctic map](#)

**Figure 4.8:** Insert Supporting Material in Edit mode

**VISIT  
MODE**

**Supporting Materials**

	Arktikum Science Centre, Arctic Centre
	Arctic Centre
	Arctic map

**Figure 4.9:** Supporting materials in Visit mode



## EDIT MODE

**Title\*** ⓘ Add Language

Arctic Livelihoods English

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**Language\*** ⓘ Remove

English Add Language

---

**Description\*** ⓘ Add Description Add Language Remove Description

The educational pathway presents different livelihoods in the Arctic. The focus of the pathway is to understand the challenges related to the sustainable use of the Arctic and its natural resources. English

**Figure 4.12:** Metadata in Edit mode



VISIT  
MODE

**Title:** Arctic Livelihoods

**Description:** The educational pathway presents different livelihoods in the Arctic. The focus of the pathway is to understand the challenges related to the sustainable use of the Arctic and its natural resources.

**Language:** English

Pathway last saved at : 2013-09-18 06:36:57

Name : Ari Laakso

Email : ari.laakso@ulapland.fi

Typical Age Range: 13-16

Intended End User Role: teacher



Figure 4.13: Metadata in Visit mode



## 5 References

Falk, J.H. and Dierking, L.D. (2000). *Learning from Museums: Visitor Experiences and the Making of Meaning*. New York: AltaMira Press

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